

REMARKS

Claims 1-28 are pending, of which claims 7 and 10 are now cancelled.

Drawing Objections

The Examiner objects that Fig. 1 does not show how the parts of expanded feature 5a in fact fit to the remainder of the drawing. He further states that the issue is not fully solved by Fig. 6. In response an additional sketch is appended to this response, appendix A, which is an expansion of Fig. 6 and which shows the connections between the LPAs and LNAs and the coupler.

The Examiner further objects that the TX splitter connection to the active array needs clarification. This clarification is also provided in the appended sketch.

The Examiner further objects that the parts in Fig. 7 are incorrectly numbered. Applicant's representative has read through the entire description relating to Fig. 7, which runs from page 27 to the end, and finds that each part of Fig. 7 is separately and consistently described, and that the description is fully in conformity with the figures. It is noted that there is reference made in that part of the description to parts that appear in earlier figures. Applicant's representative therefore does not believe that there is any amendment to be made to the drawing. If the Examiner is able to point out a specific inconsistency of which he is aware then he is invited to do so.

Claim Objections

Claims 4 and 18 are objected to because the power amplifier is connected to the receive elements and the low noise amplifier to the transmit elements whereas the opposite makes operational sense. Appropriate correction has been applied.

Claim 23 is objected to because the isolator appears both to sample the signal and protect against spurious emissions. The claim has been amended to clarify that the directional coupler obtains the sample whereas the isolator protects against spurious emissions.

Claim Rejections 35 USC 102

Claims 1, 2, 5-7, 9, and 11-14 are rejected under 35 USC 102(e) as being anticipated by Eidson (US Patent 6,411,824).

Claim 1 has been amended to specify that the original base station comprises a main antenna with transmit and receive elements and a diversity antenna with receive elements. Thus the original base station has receive diversity but lacks transmit diversity.

The claim specifies that the method comprises augmenting such an original base station by replacing the diversity antenna with a new antenna comprising both transmit and receive elements, thereby to confer on the original base station the capability for both transmit and receive diversity.

Applicant respectfully traverses the Examiner's finding that Eidson discloses an active method of *upgrading* an *existing* base station. Rather Eidson discusses *improvements* to base station *design*. Contrary to the position of the Examiner, when Eidson states "by installing the two-way diversity at the base station.." in the abstract, he does not intend that such diversity should be installed in

an existing base station. Rather he intends that such diversity should be incorporated into the design of base stations, and the meaning of the passage is that incorporating transmit and receive diversity into the design of the base station saves overall costs in implementing diversity because the one base station can serve many handsets.

In Eidson there is no *separate* diversity antenna as required by claim 1. On the contrary the Examiner is referred to Figs 1, 2, 3 and 5 all of which show a single antenna labeled 106 in Figs 1-3. Fig. 5 shows the beam paths and it is clear that all beams go via the single antenna.

Even if the Examiner does not accept the above, it is still the case that Eidson does not show an *original* base station of any kind and certainly not any base station having a *main* antenna with transmit *and* receive elements and a *diversity* antenna with receive elements. On the contrary, as clearly shown in column 12 lines 38 to 42 in the description of Fig. 6a, the same elements 520, 522 and 524 are used as transmit and receive elements depending on the setting of switch 610. Thus Eidson fails to disclose dedicated transmit elements and dedicated receive elements of any kind.

The reason for this difference is that polarization diversity in Eidson is not the usual definition of diversity. What Eidson actually does is measures the polarization of the mobile unit at the uplink and then provides the downlink signal in the same polarization. Thus in essence Eidson provides polarization matching, rather than polarization diversity. Hence he uses the same elements for both transmit and receive. In fact, Eidson has to send a specific polarization for each specific user and thus his system is only applicable to time division multiplexing, in which time slots are dedicated to individual users.

Furthermore it would not be obvious to apply the augmentation in claim 1 to the antenna of Eidson because there is no diversity antenna which could be removed and replaced by another antenna having receive and transmit elements. Rather there is only one antenna in Eidson which serves both main and diversity purposes and is made up of antenna elements which each serve both for transmit and receive and therefore the entire upgrade procedure as presently claimed is simply not applicable to the structure of Eidson.

It is thus respectfully submitted that claim 1 is allowable since the rejection based on Eidson has been overcome. All the claims dependent on claim 1 are believed to be allowable as being dependent on an allowable main claim.

Claim Rejections 35 USC 103

Claims 3, 4, 8, 10 and 15-22 are rejected over Eidson in light of Searle.

Claims 23-25 are rejected of Eidson in light of Akiya and Searle.

Amendments corresponding to those made in claim 1, have been applied to claims 16 and 22. Thus for the same reasons outlined above in respect of claim 1 it is respectfully submitted that Eidson does not teach the subject matter of claims 16 and 22. It is therefore believed that even when Eidson is combined with Searle, the features of the amended claims not taught or rendered obvious by Eidson are still not taught or rendered obvious by the combination with Searle, since Searle does not teach the upgrading of an existing base station. He certainly does not teach upgrading a base station having one kind of diversity antenna with receive elements only to another kind of diversity antenna having both transmit and receive elements.

Searle is in fact cited by the Examiner to teach the additional features of claims 16 and 23 over claim 1. Searle in fact concerns a co-channel Tx-Rx duplexer

based on cancellation, which is achieved by splitting to I and Q parts and controlling phase and amplitude for proper cancellation. The mechanism in Searle is designed for cancellation as such and does not serve to "color" a signal for decorrelation as in a specific delay sweep or a specific phase sweep. The physical architecture of Serle simply could not support the transmit diversity that is the aim of the present claims and neither can the operational method of Searle support such transmit diversity. Thus it is pure conjecture to derive features of the present claims from Searle.

Likewise claim 23 is believed to be distinguished over the combination of Akaya, Serle and Eidson since the features introduced by the new amendments are not taught or rendered obvious by Eidson as explained in respect of claim 1, and neither are they taught or rendered obvious by either Serle or Akaya.

It is therefore submitted that claims 16 and 23 as amended are allowable. The claims dependent thereon are believed to be allowable as being dependent on allowable main claims.

All the issues raised by the Examiner are believed to have been dealt with and it is respectfully submitted that the application is now in order for allowance.

Respectfully submitted,



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